

be configured in real time and or non real time to implement in hardware different signal processing functions required for different digital signal processing algorithms and or audio processing protocols, such as Dolby noise reduction, AC3, MPEG2, MP3, MPEG4, Home Theatre, various types of digital filters, thus allowing the apparatus to be used in different audio system configurations, the programmable logic optionally providing hardware acceleration of complex and software intensive functions, the configuration of the software definable logic blocks being performed by either firmware stored in local memory associated with the programmable logic devices and or by the host processor transferring the configuration data to the programmable logic devices directly or indirectly to local memory associated with the programmable logic devices or via a JTAG port of the programmable logic device, the choice of configuration firmware program depending on the user selected parameters, these parameters being entered into the apparatus via either an integrated keypad and front panel controls and or via remote control means, or personal computer means, the input information being displayed on display means, such as an Liquid Crystal Display (LCD), the software definable logic blocks optionally incorporating digital signal processor (DSP) devices and associated memory devices, the configuration and allocation of the software programs used by each digital signal processor device being performed in real time and or non real time by the host processor or configuration routines stored in non-volatile memory associated with the digital signal processors, the allocation of the specific software program being determined by user inputs;

- (b) a host processor and associated program memory means for controlling, monitoring and configuring the apparatus.